

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>GIC-555 PCT</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 99/ 23721</b>	International filing date (day/month/year) <b>07/10/1999</b>	(Earliest) Priority Date (day/month/year) <b>13/10/1998</b>
Applicant <b>GENERAL INSTRUMENT CORPORATION et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**SOFT WARE APPLICATION LIFE CYCLE AND MANAGEMENT FOR BROADCAST APPLICATIONS**

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1  
☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

US 99/23721

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04N5/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RATH K ET AL: "Set-top box control software: a key component in digital video" PHILIPS JOURNAL OF RESEARCH, NL, ELSEVIER, AMSTERDAM, vol. 50, no. 1, page 185-199 XP004008210 ISSN: 0165-5817 page 195, line 4 -page 196, line 16 figures 4,6 ---	1-4, 15, 21
X	US 5 768 539 A (DESA COLIN JOSEPH ET AL) 16 June 1998 (1998-06-16) abstract column 5, line 19 -column 5, line 29 column 5, line 49 -column 6, line 29 column 25, line 4 -column 27, line 64 column 42, line 8 -column 42, line 42 figures 6,7,9 ---	1-4, 6, 21
A	--- -/--	5, 7-20

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"S" document member of the same patent family

Date of the actual completion of the international search

26 January 2000

Date of mailing of the international search report

10/02/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Hampson, F

## INTERNATIONAL SEARCH REPORT

International Application No

US 99/23721

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EVAIN J -P: "THE MULTIMEDIA HOME PLATFORM" EBU REVIEW- TECHNICAL, BE, EUROPEAN BROADCASTING UNION. BRUSSELS, no. 275, page 4-10 XP000767493 ISSN: 0251-0936 page 6, left-hand column, line 10 -page 6, middle column, line 8 page 7, right-hand column, line 16 -page 8, left-hand column, line 44 figure 3 ---	1-4, 12, 13, 15-21
A	DE 196 50 515 A (INST RUNDFUNKTECHNIK GMBH) 25 June 1998 (1998-06-25) abstract column 1, line 1 -column 2, line 29 figure 2 ---	1, 21
A	WALL W. E.: "An Advanced Video Platform for the Cable Industry" FOURTH INTERNATIONAL WORKSHOP ON COMMUNITY NETWORKING PROCESSING, 11 - 12 September 1997, pages 31-33, XP002128740 Atlanta, GA, USA page 32, right-hand column, line 3 -page 32, right-hand column, line 29 -----	1, 21

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

'US 99/23721

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5768539	A	16-06-1998	US 5666293 A 09-09-1997
			US 5734589 A 31-03-1998
			US 5635979 A 03-06-1997
			US 5978855 A 02-11-1997
			AU 2657995 A 21-12-1995
			WO 9533338 A 07-12-1995
-----			
DE 19650515	A	25-06-1998	NONE
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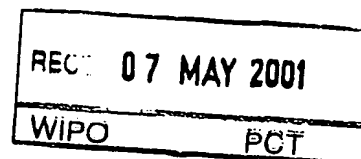
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## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



16

Applicant's or agent's file reference GIC-555 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/23721	International filing date (day/month/year) 07 OCTOBER 1999	Priority date (day/month/year) 13 OCTOBER 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): H04N 7/14 and US Cl.: 725/112, 132		RECEIVED JUL 11 2001
Applicant GENERAL INSTRUMENT CORPORATION		Technology Center 2100

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  05 APRIL 2000	Date of completion of this report  17 APRIL 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  JOHN W. MILLER
Facsimile No. (703) 305-3230	Telephone No. (703) 305-4755

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/23721

**I. Basis of the report****1. With regard to the elements of the international application:\***☐ the international application as originally filed☒ the description:

pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the claims:

pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the drawings:

pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the sequence listing part of the description:

pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.**4. ☒ The amendments have resulted in the cancellation of:**☒ the description, pages \_\_\_\_\_ NONE \_\_\_\_\_☒ the claims, Nos. \_\_\_\_\_ NONE \_\_\_\_\_☒ the drawings, sheets/fig \_\_\_\_\_ NONE \_\_\_\_\_**5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/23721

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. statement

Novelty (N)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO

## 2. citations and explanations (Rule 70.7)

Claims 1-26 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest an API which provides an ITU-T X.731-based mechanism for monitoring and controlling applications, an API which enables pausing of applications, an API which enables particular applications to advertise their respective states, such as their operational, administrative, or usage states to other applications, or their alarm, availability, or procedural statuses to other applications, an API which enables the retrieval of application version information, the recovery of application data via URLs, an API which enables the verification of application integrity, an API which enables the validation of application suitability, and an API which enables administrative application locking and unlocking.

----- NEW CITATIONS -----  
NONE

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description,  
page(s) 1-40, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the claims,  
page(s) NONE, as originally filed.  
page(s) NONE, as amended under Article 19.  
page(s) NONE, filed with the demand.  
and additional amendments:  
pages 41-47, filed with the letter of 29 March 2001.

This report has been drawn on the basis of the drawings,  
page(s) 1-9, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the sequence listing part of the description:  
page(s) NONE, as originally filed.  
pages(s) NONE, filed with the demand.  
and additional amendments:  
NONE



What is claimed is:

1. A television set-top terminal, comprising:  
a computer readable medium having computer  
program code; and

means for executing said computer program code  
to implement an Application Programming Interface  
(API) wherein:

application data which defines applications is  
recovered at the terminal according to locators  
associated with the applications;

the applications are registered and installed  
at the terminal;

the API enables running and subsequent stopping  
of the applications; and

the API enables pausing of the applications  
once they are running, and subsequent resuming of  
the applications.

2. The terminal of claim 1, wherein:

a user is notified of the presence of the  
applications after registration and installation  
thereof.

3. The terminal of claim 1, wherein:

said API enables the retrieval of the  
applications as downloadable software applications.

4. The terminal of claim 1, wherein:

said API enables the retrieval of the  
applications as broadcast software applications.

5. The terminal of claim 1, wherein:  
said API is independent of an operating system  
and hardware of the terminal.

6. A television set-top terminal, comprising:  
a computer readable medium having computer  
program code; and

means for executing said computer program code  
to implement an Application Programming Interface  
(API) wherein:

application data which defines applications is  
recovered at the terminal according to locators  
associated with the applications;

the applications are registered and installed  
at the terminal; and

the API enables particular ones of the  
applications to advertise their respective states to  
other applications.

7. The terminal of claim 6, wherein:  
a user is notified of the presence of the  
applications after registration and installation  
thereof.

8. The terminal of claim 6, wherein:  
said API provides an ITU-T X.731-based  
mechanism for monitoring and controlling the  
applications.

9. The terminal of claim 6, wherein:  
said API enables at least one of the other  
applications to access the advertised state of at  
least one of the particular advertising  
applications.

10. The terminal of claim 6, wherein:  
said API enables retrieval of version  
information associated with the applications.

11. A television set-top terminal, comprising:  
a computer readable medium having computer  
program code; and  
means for executing said computer program code  
to implement an Application Programming Interface  
(API) wherein:  
application data which defines applications is  
recovered at the terminal according to locators  
associated with the applications;  
the applications are registered and installed  
at the terminal; and  
said locator is in the form of a Uniform  
Resource Locator (URL).

12. The terminal of claim 6, wherein:  
said API enables verification of the integrity  
of the applications.

13. A television set-top terminal, comprising:  
a computer readable medium having computer  
program code; and

means for executing said computer program code to implement an Application Programming Interface (API) wherein:

application data which defines applications is recovered at the terminal according to locators associated with the applications;

the applications are registered and installed at the terminal; and

the API enables validation of the suitability of the applications for the terminal.

14. The terminal of claim 6, wherein:

said API enables administrative locking and unlocking of the applications.

15. The terminal of claim 6, wherein:

said API enables particular ones of the applications to advertise respective alarm statuses thereof to other ones of the applications.

16. The terminal of claim 6, wherein:

said API enables particular ones of the applications to advertise respective availability statuses thereof to other ones of the applications.

17. The terminal of claim 6, wherein:

said API enables particular ones of the applications to advertise respective procedural statuses thereof to other ones of the applications.

18. The terminal of claim 6, wherein:  
said API enables particular ones of the  
applications to advertise respective operational  
states thereof to other ones of the applications.

19. The terminal of claim 6, wherein:  
said API enables particular ones of the  
applications to advertise respective administrative  
states thereof to other ones of the applications.

20. The terminal of claim 6, wherein:  
said API enables particular ones of the  
applications to advertise respective usage states  
thereof to other ones of the applications.

21. A method for implementing a software  
architecture for a television set-top terminal,  
comprising the steps of:  
providing a computer readable medium having  
computer program code; and  
executing said computer program code to  
implement an Application Programming Interface (API)  
to:  
recover application data which defines  
applications at the terminal according to a locator  
associated with the application data;  
register and install the applications at the  
terminal;  
enable running and subsequent stopping of the  
applications; and

enable pausing of the applications once they are running, and subsequent resuming of the applications.

22. The method of claim 21, wherein a user is notified of the presence of the applications after registration and installation thereof.

23. A method for implementing a software architecture for a television set-top terminal, comprising the steps of:

providing a computer readable medium having computer program code; and  
executing said computer program code to implement an Application Programming Interface (API) to:

recover application data which defines applications at the terminal according to a locator associated with the application data;

register and install the applications at the terminal; and

enable particular ones of the applications to advertise their respective states to other applications.

24. The method of claim 23, wherein a user is notified of the presence of the applications after registration and installation thereof.

25. The terminal of claim 11, wherein:  
a user is notified of the presence of the  
applications after registration and installation  
thereof.

26. The terminal of claim 13, wherein:  
a user is notified of the presence of the  
applications after registration and installation  
thereof.

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: BARRY R. LIPSITZ  
755 MAIN STREET  
BUILDING NO. 8  
MONROE, CT 06468

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing  
(day/month/year)

02 MAY 2001

Applicant's or agent's file reference

GIC-555 PCT

#### IMPORTANT NOTIFICATION

International application No.

PCT/US99/23721

International filing date (day/month/year)

07 OCTOBER 1999

Priority Date (day/month/year)

13 OCTOBER 1998

Applicant

GENERAL INSTRUMENT CORPORATION

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

JOHN W. MILLER

Telephone No. (703) 305-4795

*Rugenia Zogan*



# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>GIC-555 PCT</b>	FOR FURTHER ACTION      See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US99/23721</b>	International filing date ( <i>day/month/year</i> ) <b>07 OCTOBER 1999</b>	Priority date ( <i>day/month/year</i> ) <b>13 OCTOBER 1998</b>
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): H04N 7/14 and US Cl.: 725/112, 132</b>		
Applicant <b>GENERAL INSTRUMENT CORPORATION</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>05 APRIL 2000</b>	Date of completion of this report  <b>17 APRIL 2001</b>
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231  Facsimile No. (703) 305-3230	Authorized officer  <b>JOHN W. MILLER</b> <i>Rugenia Zogor</i> Telephone No. (703) 405-4755

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/23721

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

☐ the international application as originally filed

☒ the description:

pages (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the claims:

pages (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the drawings:

pages (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the sequence listing part of the description:

pages (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages NONE

☒ the claims, Nos. NONE

☒ the drawings, sheets/fig NONE

### 5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/23721

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. statement

Novelty (N)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-26</u>	YES
	Claims <u>NONE</u>	NO

## 2. citations and explanations (Rule 70.7)

Claims 1-26 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest an API which provides an ITU-T X.731-based mechanism for monitoring and controlling applications, an API which enables pausing of applications, an API which enables particular applications to advertise their respective states, such as their operational, administrative, or usage states to other applications, or their alarm, availability, or procedural statuses to other applications, an API which enables the retrieval of application version information, the recovery of application data via URLs, an API which enables the verification of application integrity, an API which enables the validation of application suitability, and an API which enables administrative application locking and unlocking.

----- NEW CITATIONS -----  
NONE

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description,  
page(s) 1-40, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the claims,  
page(s) NONE, as originally filed.  
page(s) NONE, as amended under Article 19.  
page(s) NONE, filed with the demand.  
and additional amendments:  
pages 41-47, filed with the letter of 29 March 2001.

This report has been drawn on the basis of the drawings,  
page(s) 1-9, as originally filed.  
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NONE

This report has been drawn on the basis of the sequence listing part of the description:  
page(s) NONE, as originally filed.  
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NONE

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ART 34 AMOT

What is claimed is:

1. A television set-top terminal, comprising:  
a computer readable medium having computer program code means; and  
means for executing said computer program code means to implement an Application Programming Interface (API) wherein:  
application data which defines applications is recovered at the terminal according to locators associated with the applications;  
the applications are registered and installed at the terminal; and  
a user is notified of the presence of the applications after registration and installation thereof.
2. The terminal of claim 1, wherein:  
said API enables the retrieval of the applications as downloadable software applications.
3. The terminal of claim 1, wherein:  
said API enables the retrieval of the applications as broadcast software applications.
4. The terminal of claim 1, wherein:  
said API is independent of an operating system and hardware of the terminal.
5. The terminal of claim 1, wherein:

said API provides an ITU-T X.731-based mechanism for monitoring and controlling the applications.

6. The terminal of claim 1, wherein:  
said API enables running and subsequent stopping of the applications.

7. The terminal of claim 6, wherein:  
said API enables pausing of the applications once they are running, and subsequent resuming of the applications.

8. The terminal of claim 1, wherein:  
said API enables particular ones of the applications to advertise their respective states to other applications.

9. The terminal of claim 8, wherein:  
said API enables at least one of the other applications to access the advertised state of at least one of the particular advertising applications.

10. The terminal of claim 1, wherein:  
said API enables retrieval of version information associated with the applications.

11. The terminal of claim 1, wherein:  
said locator is in the form of a Uniform Resource Locator (URL).

12. The terminal of claim 1, wherein:  
said API enables verification of the integrity  
of the applications.

13. The terminal of claim 1, wherein:  
said API enables validation of the suitability  
of the applications for the terminal.

14. The terminal of claim 1, wherein:  
said API enables administrative locking and  
unlocking of the applications.

15. The terminal of claim 1, wherein:  
said API enables particular ones of the  
applications to advertise respective alarm statuses  
thereof to other ones of the applications.

16. The terminal of claim 1, wherein:  
said API enables particular ones of the  
applications to advertise respective availability  
statuses thereof to other ones of the applications.

17. The terminal of claim 1, wherein:  
said API enables particular ones of the  
applications to advertise respective procedural  
statuses thereof to other ones of the applications.

18. The terminal of claim 1, wherein:

said API enables particular ones of the applications to advertise respective operational states thereof to other ones of the applications.

19. The terminal of claim 1, wherein:  
said API enables particular ones of the applications to advertise respective administrative states thereof to other ones of the applications.

20. The terminal of claim 1, wherein:  
said API enables particular ones of the applications to advertise respective usage states thereof to other ones of the applications.

21. A method for implementing a software architecture for a television set-top terminal, comprising the steps of:

providing a computer readable medium having computer program code means; and

executing said computer program code means to implement an Application Programming Interface (API) to:

recover application data which defines applications at the terminal according to a locator associated with the application data;

register and install the applications at the terminal; and

notify a user of the presence of the applications after registration and installation thereof.